PTO/SB/17 (10-02)
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# FEE TRANSMITTAL for FY 2003

*Patent fees are subject to annual revision.*

☐ Applicant claims small entity status. See 37 CFR 1.27.

**TOTAL AMOUNT OF PAYMENT** ($)

| *Complete if Known* | |
|---|---|
| Application Number | 09/476,633 |
| Filing Date | December 31, 1999 |
| First Named Inventor | Li-Shun Wang |
| Examiner Name | Garcia, J. |
| Group/Art Unit | 2823 |
| Attorney Docket No. | 42390P7832 |

## METHOD OF PAYMENT (check one)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☒ None

☐ Deposit Account

Deposit Account Number: 02-2666

Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

**The Commissioner is authorized to:** *( check all that apply)*

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) required under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20.

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account

## FEE CALCULATION

### 1. BASIC FILING FEE

| Large Entity Fee Code | Large Entity Fee ($) | Small Entity Fee Code | Small Entity Fee ($) | Fee Description | Fee Paid |
|---|---|---|---|---|---|
| 1001 | 740 | 2001 | 370 | Utility filing fee | |
| 1002 | 330 | 2002 | 165 | Design filing fee | |
| 1003 | 510 | 2003 | 255 | Plant filing fee | |
| 1004 | 740 | 2004 | 370 | Reissue filing fee | |
| 1005 | 160 | 2005 | 80 | Provisional filing fee | |

SUBTOTAL (1) ($)

### 2. EXTRA CLAIM FEES

| | Extra Claims | | Fee from below | | Fee Paid |
|---|---|---|---|---|---|
| Total Claims | | - 21** = | | X = | |
| Independent Claims | | - 3 = | | X = | |
| Multiple Dependent | | | | = | |

| Large Entity Fee Code | Large Entity Fee ($) | Small Entity Fee Code | Small Entity Fee ($) | Fee Description |
|---|---|---|---|---|
| 1202 | 18 | 2202 | 9 | Claims in excess of 20 |
| 1201 | 84 | 2201 | 42 | Independent claims in excess of 3 |
| 1203 | 280 | 2203 | 140 | Multiple Dependent claim, if not paid |
| 1204 | 84 | 2204 | 42 | **Reissue independent claims over original patent |
| 1205 | 18 | 2205 | 9 | **Reissue claims in excess of 20 and over original patent |

SUBTOTAL (2) ($)

***or number previously paid, if greater, For Reissues, see below*

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

| Large Entity Fee Code | Large Entity Fee ($) | Small Entity Fee Code | Small Entity Fee ($) | Fee Description | Fee Paid |
|---|---|---|---|---|---|
| 1051 | 130 | 2051 | 65 | Surcharge - late filing fee or oath | |
| 1052 | 50 | 2052 | 25 | Surcharge - late provisional filing fee or cover sheet. | |
| 2053 | 130 | 2053 | 130 | Non-English specification | |
| 1812 | 2,520 | 1812 | 2,520 | For filing a request for *ex parte* reexamination | |
| 1804 | 920 * | 1804 | 920 * | Requesting publication of SIR prior to Examiner action | |
| 1805 | 1,840 * | 1805 | 1,840 * | Requesting publication of SIR after Examiner action | |
| 1251 | 110 | 2251 | 55 | Extension for reply within first month | |
| 1252 | 400 | 2252 | 200 | Extension for reply within second month | |
| 1253 | 920 | 2253 | 460 | Extension for reply within third month | |
| 1254 | 1,440 | 2254 | 720 | Extension for reply within fourth month | |
| 1255 | 1,960 | 2255 | 980 | Extension for reply within fifth month | |
| 1404 | 320 | 2401 | 160 | Notice of Appeal | |
| 1402 | 320 | 2402 | 160 | Filing a brief in support of an appeal | |
| 1403 | 280 | 2403 | 140 | Request for oral hearing | |
| 1451 | 1,510 | 2451 | 1,510 | Petition to institute a public use proceeding | |
| 1452 | 110 | 2452 | 55 | Petition to revive - unavoidable | |
| 1453 | 1,280 | 2453 | 640 | Petition to revive - unintentional | |
| 1501 | 1,280 | 2501 | 640 | Utility issue fee (or reissue) | |
| 1502 | 460 | 2502 | 230 | Design issue fee | |
| 1503 | 620 | 2503 | 310 | Plant issue fee | |
| 1460 | 130 | 2460 | 130 | Petitions to the Commissioner | |
| 1807 | 50 | 1807 | 50 | Processing fee under 37 CFR 1.17(q) | |
| 1806 | 180 | 1806 | 180 | Submission of Information Disclosure Stmt | |
| 8021 | 40 | 8021 | 40 | Recording each patent assignment per property (times number of properties) | |
| 1809 | 740 | 1809 | 370 | Filing a submission after final rejection (37 CFR § 1.129(a)) | |
| 1810 | 740 | 2810 | 370 | For each additional invention to be examined (37 CFR § 1.129(b)) | |
| 1801 | 740 | 2801 | 370 | Request for Continued Examination (RCE) | |
| 1802 | 900 | 1802 | 900 | Request for expedited examination of a design application | |

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($)



## SUBMITTED BY

Complete (if applicable)

| Name (Print/Type) | Raul D. Martinez | Registration No. (Attorney/Agent) | 46,904 | Telephone | (310) 207-3800 |
|---|---|---|---|---|---|
| Signature | Raul D Martinez | | | Date | 11/19/02 |

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Our Ref. No.: 42390P7832

#20
Reply Brief
J. McMillan
12/17/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | |
|---|---|
| In re Patent Application of: | |
| Li-Shun Wang, et al. | Examiner: Garcia, J. |
| Application No.: 09/476,633 | |
| Filed: December 31, 1999 | Art Unit: 2823 |
| For: REMOVAL OF RESIDUE FROM A SUBSTRATE | |



Assistant Commissioner for Patents
Washington, D.C. 20231

## REPLY BRIEF

Appellants submit, in triplicate, the following Reply Brief pursuant to 37 C.F.R. § 1.193(b) for consideration by the Board of Appeals and Interferences. The Reply is responsive to the Examiner's Answer.

Noted
JAG
2-13-03

## ARGUMENT

Claim Rejections Under 35 U.S.C. § 102(e) and 103(a)

In numbered paragraph 11 of the Examiner's Answer, the Examiner maintains the position that Kishii discloses rinsing with an agent comprising hydrogen peroxide. The Examiner draws this conclusion from the fact that "cleaning," as defined in Exhibit A of Appellants' Appeal Brief, and "rinsing," as defined in Exhibit B, are both related to the removal of contaminants/substances from a wafer surface.

In response, Appellants first note that the limitations at issue are not directed toward the removal of contaminants or substances. Appellants submit that the Examiner is improperly replacing the term "rinse" with the term "remove" simply because some derivative of the word "remove" is present in both definitions for the terms "cleaning" (Exhibit A) and "rinsing"

(Exhibit B). Rather, the limitations at issue are directed towards rinsing with an agent comprising hydrogen peroxide, which is neither taught nor suggested by Kishii.

Specifically, Kishii discloses a chemical mechanical polish process using abrasives of $MnO_2$, $Mn_2O_3$, or $Mn_3O_4$, which are soluble to an acid, and in order to remove the residual abrasives remaining in the substrate, Kishii suggests using an acid cleaning process (Col., 14, lines 53-57). Kishii discloses a suitable acidic cleaning solution containing HCl (hydrochloric acid), $H_2O_2$, and $H_2O$ with a volumetric ratio of 1:1:48 (Col. 14, lines 57-59). Thus, Kishii discloses an acidic cleaning solution to chemically react with the remaining abrasive products of the chemical mechanical process, which fits squarely into the definition of "cleaning" in Exhibit A (e.g., removing contaminants with liquid chemicals).

However, conducting a chemical process to remove contaminants, as disclosed in Kishii, does not teach or suggest rinsing with an agent comprising hydrogen peroxide, wherein the rinse does not chemically react with the contaminants/substances to be removed. Rather, the term "rinse," as defined in Exhibit B and used in Appellants' claims, refers to the removal of products with a solution containing water. No chemical reaction with the contaminants/substances to be removed is stated or inferred by the definition or the usage of the term "rinse" in Appellants' claims.

Moreover, the hydrogen peroxide in the rinse is not meant to react with the contaminants/substances to be removed. This is evidenced by Appellants' specification, which indicates that the amount of hydrogen peroxide in the solution is limited by the effect of the hydrogen peroxide on the underlying metal layer (e.g., no reaction with the contaminants/substances to be removed) (emphasis added) (Appellants' specification, page 8, lines 17 and 18).

In light of the foregoing, Appellants respectfully submit that Kishii fails to teach or suggest a rinse comprising hydrogen peroxide, as recited in Appellants' claims. Thus, all rejections of Appellants' claims should be overturned.

Claim Rejections Under 35 U.S.C. § 112, First Paragraph

In maintaining the rejection of Appellants' claims under 35 U.S.C., first paragraph, the Examiner states that there is no support in Appellants' specification for an "agent" or "solution" "consisting of" hydrogen peroxide. However, the Examiner acknowledges that the specification does contain support for an aqueous solution of $H_2O_2$ (e.g., hydrogen peroxide) and deionized water. The Examiner further states that there is no support for solutions that contain molten hydrogen peroxide, which is solid at room temperature.

In response, Appellants first note that, as pointed out by the Examiner, the specification does disclose "solutions" that contain hydrogen peroxide. Moreover, the specification indicates that the solution used to rinse the substrate is also referred to in the specification as an "agent" (Appellants' specification, page 8, line 9). Thus, Appellants submit that the specification provides adequate disclosure for both a "solution" and an "agent" that contains hydrogen peroxide.

Furthermore, due to the nature of a solution, a solvent is necessarily a component of the solution that need not be recited after the transitional phrase. In light of the specification and the common usage of the term "solution," it would be improper to read the claims that recite a "solution" or an "agent" as not containing a solvent. Therefore, Appellants submit that the rejected claims are not directed towards the use of solid hyrogen peroxide without a solvent, as suggested by the Examiner.

Finally, Appellants contend that it is Appellants' right to claim the components of a properly disclosed solution or agent in an open-ended fashion (e.g., comprising) or in a manner that precludes the addition of other components to the solution or agent (e.g., consisting of) (MPEP 2111.03).

Accordingly, Appellants respectfully request that all rejections under 35 U.S.C. 112, first paragraph, be overturned.

## CONCLUSION

For the reasons specified above, the rejection of all claims should be overturned and the claims allowed.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Dated: November 19, 2002

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**CERTIFICATE OF MAILING:**

I hereby certify that this correspondence is being deposited as First Class Mail with the United States Postal Service in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on November 19, 2002.

Lillian E. Rodriguez — November 19, 2002